

REMARKS

The present invention relates to a method for making an abrasion resistant conductive film and more particularly to a method of making such a film having utility as a component of a conductive gasket for electrical apparatus to block the entry or exit of electromagnetic interference (EMI) and radio frequency interference (RFI) through openings in the apparatus.

Applicant thanks the Examiner for his attention to the Application and especially for the indication that claims 3 through 5 include allowable subject matter. Applicant has amended claims 3 and 4 to incorporate the language of claim 1 therein except insofar as it was duplicative and these claims as well as claim 5 which depends from claim 4 are now in allowable condition.

Claims 1 and 2 are rejected as unpatentable under 35 U.S.C. 103(a) over Miska '795 in view of Fong '682. Before considering the rejection and references in detail, it may be helpful to briefly review Applicant's invention.

The invention relates to a method for forming a conductive, abrasion resistant gasket for electromagnetic interference shielding. One of the problems with such gaskets is that abrasion of the surface may remove a conductive layer from the surface, leaving high resistance portions to which low resistance contact cannot be made, thereby reducing the shielding efficiency of the gasket. Applicant has invented both a gasket and a method for making the gasket to overcome this problem. The gasket in accordance with the invention has a plurality of peaks upstanding from a plane surface of the gasket. A conductive metal coating is plated onto the peaks and extends down to the plane surface. If the peaks are abraded so that the conductive surface on the very tops of the peaks, which tops may be pointed or not, preferably not, then the edges of the plating extending up the walls leading to the peaks will still be contacted by an opposing surface and electrical conductivity thereto will be maintained to preserve the EMI shielding function of the gasket. The present invention relates to a method for making a gasket of the type just described.

Essential to formation of the gasket is the formation of the peaks. Without two-sided peaks, which, when abraded, expose the edges of the conductive plating on both sides of the peak as shown clearly in Figure 5, the advantages of the invention will not be obtained. In claim 1 this is described as embossing least of the obverse side so as to provide it with a plurality of peaks which upstand from the plane surface of the obverse side. This is further described in subparagraph C of

claim 1, which recites vapor depositing conductive metal coating onto the obverse side that overlays the peaks and the plane surface of the obverse side so as to form a conductive film for disposition as a gasket between the adjacent conductive metal surfaces and the gasket being unaffected by erosion of the metal coating from the tops of the peaks.

Turning now to Miska '795, it is apparent that the shielding structure shown in Miska will not function in accordance with the present invention. Figure 4, which also appears on the cover of the patent is relied on by the Examiner. The Examiner states that Figure 4 shows a plurality of peaks, but does not indicate where they are. In fact, armed with an understanding of the invention from the description set forth above, it is clear that Miska shows no peaks, that is no structures that, when abraded, continue to provide a low-resistance contact so as to continue to reduce EMI. In Miska, the EMI reducing contact is formed between the metal flange of 30 and the back plane 32 of a chassis. There is nothing that could be regarded as a peak in contact with back plane 32, and therefore the Examiner must be referring to the other surface of the gasket that contacts flange 30. While the surface of the core 42 is contoured, there are no peaks. If the contact surface 44 is worn away underneath the flange by abrasion from flange 30, there still could be contact around the periphery of the low lying portion at the center of figure 4, but this contact is completely within the boundaries of the flange 30 and therefore won't preserve the EMI shielding characteristics of the arrangement. Contact at the periphery of flange 30 would be destroyed by abrasion and therefore EMI shielding would be reduced or eliminated. In Applicant's invention, as shown in figure 5 for example, abrasion, if it occurs, doesn't destroy a continuous conductive path from the gasket to the metal surface 16 and back to the gasket. In accordance with this invention, Miska can be described as providing steps, but not peaks. The difference is that in Miska the steps rise within the confines of the flange 30 but never come back down as do peaks as claimed in the present invention. As can be appreciated, this is not a semantic difference but an essential requirement for the invention to provide its desired function.

Fong is relied on for disclosing vapor depositing a conductive metal. Respectfully, Fong relates to liquid crystal displays not EMI gaskets and Applicant submits that there is nothing in either Fong or Miska that would suggest that a technique used for forming a preferably transmissive, and therefore almost certainly

very thin metalized layer on a sheet of optical glass or plastic to form a liquid crystal display would have any use in the manufacture of EMI seals consisting of metalized fabric fixed to a resilient foamed polymer core. Applicant respectfully submits that Fong is about as non-analogous as it could possibly be and that nothing in either Fong nor Miska nor any other reference mentioned by the Examiner provides any motivation to combine them.

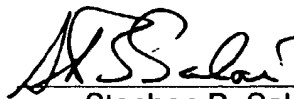
Claim 2 is rejected under 35 U.S.C. 103(a) as unpatentable over Miska and Fong as already discussed and in further review of Kaplo '635. The same distinctions made between the present invention and Miska and the inapplicability of Fong apply to claim 2. Further, Kaplo does not provide any teaching of the embossed peaks or vapor depositing. While Kaplo does, as the Examiner suggests, show a resilient core around which a conductive sheath is wrapped, Applicant's claims are much more specific than this and Applicant submits that Kaplo adds nothing to the primary references that supports the rejection.

Each of the matters raised in the Office Action having been addressed, reconsideration and favorable action are requested.

Dated: February 24, 2004

Respectfully submitted,

HARTER, SECREST & EMERY LLP



Stephen B. Salai, Reg. No: 26,990

To: HARTER, SECREST & EMERY LLP
1600 Bausch & Lomb Place
Rochester, New York 14604
Telephone: 585-232-6500
Facsimile: 585-232-2152

REMARKS

The present invention relates to a method for making an abrasion resistant conductive film and more particularly to a method of making such a film having utility as a component of a conductive gasket for electrical apparatus to block the entry or exit of electromagnetic interference (EMI) and radio frequency interference (RFI) through openings in the apparatus.

Applicant thanks the Examiner for his attention to the Application and especially for the indication that claims 3 through 5 include allowable subject matter. Applicant has amended claims 3 and 4 to incorporate the language of claim 1 therein except insofar as it was duplicative and these claims as well as claim 5 which depends from claim 4 are now in allowable condition.

Claims 1 and 2 are rejected as unpatentable under 35 U.S.C. 103(a) over Miska '795 in view of Fong '682. Before considering the rejection and references in detail, it may be helpful to briefly review Applicant's invention.

The invention relates to a method for forming a conductive, abrasion resistant gasket for electromagnetic interference shielding. One of the problems with such gaskets is that abrasion of the surface may remove a conductive layer from the surface, leaving high resistance portions to which low resistance contact cannot be made, thereby reducing the shielding efficiency of the gasket. Applicant has invented both a gasket and a method for making the gasket to overcome this problem. The gasket in accordance with the invention has a plurality of peaks upstanding from a plane surface of the gasket. A conductive metal coating is plated onto the peaks and extends down to the plane surface. If the peaks are abraded so that the conductive surface on the very tops of the peaks, which tops may be pointed or not, preferably not, then the edges of the plating extending up the walls leading to the peaks will still be contacted by an opposing surface and electrical conductivity thereto will be maintained to preserve the EMI shielding function of the gasket. The present invention relates to a method for making a gasket of the type just described.

Essential to formation of the gasket is the formation of the peaks. Without two-sided peaks, which, when abraded, expose the edges of the conductive plating on both sides of the peak as shown clearly in Figure 5, the advantages of the invention will not be obtained. In claim 1 this is described as embossing least of the obverse side so as to provide it with a plurality of peaks which upstand from the plane surface of the obverse side. This is further described in subparagraph C of

claim 1, which recites vapor depositing conductive metal coating onto the obverse side that overlays the peaks and the plane surface of the obverse side so as to form a conductive film for disposition as a gasket between the adjacent conductive metal surfaces and the gasket being unaffected by erosion of the metal coating from the tops of the peaks.

Turning now to Miska '795, it is apparent that the shielding structure shown in Miska will not function in accordance with the present invention. Figure 4, which also appears on the cover of the patent is relied on by the Examiner. The Examiner states that Figure 4 shows a plurality of peaks, but does not indicate where they are. In fact, armed with an understanding of the invention from the description set forth above, it is clear that Miska shows no peaks, that is no structures that, when abraded, continue to provide a low-resistance contact so as to continue to reduce EMI. In Miska, the EMI reducing contact is formed between the metal flange of 30 and the back plane 32 of a chassis. There is nothing that could be regarded as a peak in contact with back plane 32, and therefore the Examiner must be referring to the other surface of the gasket that contacts flange 30. While the surface of the core 42 is contoured, there are no peaks. If the contact surface 44 is worn away underneath the flange by abrasion from flange 30, there still could be contact around the periphery of the low lying portion at the center of figure 4, but this contact is completely within the boundaries of the flange 30 and therefore won't preserve the EMI shielding characteristics of the arrangement. Contact at the periphery of flange 30 would be destroyed by abrasion and therefore EMI shielding would be reduced or eliminated. In Applicant's invention, as shown in figure 5 for example, abrasion, if it occurs, doesn't destroy a continuous conductive path from the gasket to the metal surface 16 and back to the gasket. In accordance with this invention, Miska can be described as providing steps, but not peaks. The difference is that in Miska the steps rise within the confines of the flange 30 but never come back down as do peaks as claimed in the present invention. As can be appreciated, this is not a semantic difference but an essential requirement for the invention to provide its desired function.

Fong is relied on for disclosing vapor depositing a conductive metal. Respectfully, Fong relates to liquid crystal displays not EMI gaskets and Applicant submits that there is nothing in either Fong or Miska that would suggest that a technique used for forming a preferably transmissive, and therefore almost certainly

very thin metalized layer on a sheet of optical glass or plastic to form a liquid crystal display would have any use in the manufacture of EMI seals consisting of metalized fabric fixed to a resilient foamed polymer core. Applicant respectfully submits that Fong is about as non-analogous as it could possibly be and that nothing in either Fong nor Miska nor any other reference mentioned by the Examiner provides any motivation to combine them.

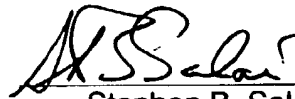
Claim 2 is rejected under 35 U.S.C. 103(a) as unpatentable over Miska and Fong as already discussed and in further review of Kaplo '635. The same distinctions made between the present invention and Miska and the inapplicability of Fong apply to claim 2. Further, Kaplo does not provide any teaching of the embossed peaks or vapor depositing. While Kaplo does, as the Examiner suggests, show a resilient core around which a conductive sheath is wrapped, Applicant's claims are much more specific than this and Applicant submits that Kaplo adds nothing to the primary references that supports the rejection.

Each of the matters raised in the Office Action having been addressed, reconsideration and favorable action are requested.

Dated: February 24, 2004

Respectfully submitted,

HARTER, SECREST & EMERY LLP



Stephen B. Salai, Reg. No: 26,990

To: HARTER, SECREST & EMERY LLP
1600 Bausch & Lomb Place
Rochester, New York 14604
Telephone: 585-232-6500
Facsimile: 585-232-2152